

County of Loudoun
Office of Transportation Services
MEMORANDUM

DATE: August 26, 2008
TO: Van Armstrong, Project Manager, Department of Planning
FROM: Art Smith, Senior Coordinator, Planning and Development
SUBJECT: ZCPA 2008-0001, ZCPA 2008-0002, SPEX 2002-0028
Broadlands Regional Medical Center
Second Referral

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This referral will serve to update the status of the comments in the July 17, 2008 OTS referral on these applications based on the responses dated August 8, 2008 from the applicant's legal representatives. OTS has also reviewed the applicant's Revised Traffic Impact Analysis (TIA) dated August 6, 2008 as well as the applicant's responses to VDOT referral comments also dated August 6, 2008. The proposed conditions of SPEX 2008-0028 were also considered with respect to transportation impacts.

Issue 1: Please document the status of the construction of Broadlands Boulevard to its intersection with Belmont Ridge Road.

Response: This road segment is constructed up to the proposed intersection with Route 659 and, pursuant to an agreement between the County and Broadlands Associates, LP, is expected to be completed in late 2008 or early 2009 concurrent with the completion of the widening of Route 659.

Status: Issue resolved.

Issue 2: Please document the status of widening Belmont Ridge Road to four lanes between Broadlands Boulevard and the Greenway.

Response: Pursuant to an agreement between the County and Broadlands Associates, LP, this road section is under construction and is expected to be completed in late 2008 or early 2009.

Status: Issue resolved.

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Issue 3: Improvements to Route 659 are important to adequate transportation access to the proposed medical campus. OTS's reading of Proffer V.D.49 of ZCPA 2008-0001 is that the applicant will provide a four-lane median divided expansion to Route 659 between Broadlands Boulevard and Northstar Boulevard in Brambleton. Further, these improvements will be constructed prior to the issuance of the first occupancy permit or its equivalent for the first building constructed on the property. Please confirm the accuracy of this proffer summary. This will be a substantial improvement over the current efforts of the "Route 659 Road Club" to widen the road, since that effort would only extend between Broadlands Boulevard and Truro Parish Drive.

Response: Staff's analysis of the applicant's proffers is correct, although the applicant also notes that it proffered these improvements with the expectation that funds from the Route 659 Transportation Improvement Fund (TIF), including all existing funds and all future contributions to the fund, will be made available to the applicant to assist in the construction of the section of Route 659 between Broadlands Boulevard and Truro Parish Drive. The applicant's principal focus is on the section south of Truro Parish where currently no proffered funds are available or expected.

Status: Issue resolved. OTS supports the use of Route 659 TIF funds for use in the construction of this proffer.

Issue 4: The TIA for this application demonstrates that traffic signals will need to be installed at the Route 659/Broadlands Boulevard and Route 659/Truro Parish Drive intersections by 2011 to serve this proposed development at adequate service levels. There are no existing proffers specifically for these signals. The participation of the Medical Campus in the provision of these signals needs to be defined.

Response: Pursuant to an agreement between the County and Broadlands Associates, LP, a traffic signal is to be installed at the intersection of Broadlands Boulevard and Route 659 concurrent with the widening of Route 659 at that intersection. It is the applicant's understanding that design plans for the signal have been submitted to Loudoun County for review and approval.

The TIAM indicates that the need for a traffic signal at the intersection of Route 659 and Truro Parish Drive is not generated by the applicant's proposed development; the need for a traffic signal results from background conditions and the heavy north-south traffic using this important arterial. Because the Route 659 TIF was formed to address the cumulative effects of development along Route 659 between Broadlands Boulevard and Truro Parish Drive, the applicant anticipates that TIF funds would be used to fund installation of any needed traffic signal at that intersection.

Status: Issue resolved for the signal at Broadlands Boulevard/Route 659. Not resolved for Truro Parish Drive/Route 659. As previously noted, OTS supports the use of TIF funds for the widening of Route 659 south to Brambleton. Therefore, what

certainty is there for TIF funds to be available for installation of the traffic signal at Truro Parish Drive? If there were certainty, for example the signal being funded first, then the issue would be resolved.

Issue 5: The transportation conditions of SPEX 2008-0028 include the following and all are appreciated:

- A multi-purpose trail along Broadlands Boulevard
- A bus shelter
- Applicant coordination with the County for transit marketing
- An emergency entrance to the hospital

Response: Comment acknowledged.

Status: All of the above Issue 5 improvements have been resolved. OTS appreciates the cooperation of the applicant.

Issue 6: Please identify connections between the Broadlands Boulevard trail and the sidewalk/trail network in the Broadlands Community.

Response: The applicant's plans have been revised to highlight the 8 foot wide trail along Broadlands Boulevard and the 5 foot wide sidewalk along Education Court.

Status: To meet County standards, the trail should be 10 feet wide.

Issue 7: Documentation on why the number of beds is a better variable for determining trip generation from a hospital, rather than square footage, would be appreciated.

Response: The number of beds is a more appropriate variable to use compared to the square footage of the hospital, as it is both more precise and can more accurately reflect the number of employees, patients and visitors. Many new hospitals have private rooms rather than the shared rooms in older hospitals, thereby making the square footage higher without changing the bed count, number of employees needed, and number of visitors to the hospital. The square footage of hospitals may vary as well based on how much mechanical/core, laboratory, and testing area there is. In addition, the "number of beds" variable in the Institute of Transportation Engineers (ITE) Trip Generation, 7th Edition, has a large sample size for each time period, making the rate for calculating and estimating vehicle trips more statically reliable than the square footage variable.

If the square footage of the hospital is to be used, it should be net square footage. On average, the net square footage of a hospital is approximately 60-65% of the gross floor area. Using the net square footage in the trip generation calculations produces results

that are closer to those when using the 'number of beds' variable, reducing the discrepancy in the results of the two variables.

For the reasons above, the applicant maintains that using the number of beds variable for the hospital land use in the Trip Generation manual is a more reliable way to estimate the trips that will be generated by a new hospital.

Status: The applicant's response seems logical. Over time ITE will have more hospital trip rate case studies and greater clarity may emerge. Please note the revised traffic study calculates trip generation using both beds and square footage. The number of beds generates 2,951 daily vehicle trips; square footage generates 6,139 such trips. The required transportation improvements are the same in either case.

Issue 8: The applicant should work together with the Broadlands Community and the County to identify and implement traffic calming techniques which would discourage cut-thru traffic to the hospital using local streets.

Response: The applicant has agreed to contribute \$200,000 to the County for traffic calming measures. The money, which will be paid prior to the approval of the initial site plan for the hospital, can be used by the County to install features designed to discourage cut-through traffic. To better identify what local Broadlands' roads are being used as cut-through streets by vehicles accessing the property, the applicant has agreed to conduct a traffic analysis, should the county request one in writing within three years of issuance of the first occupancy permit. The applicant's \$200,000 contribution could be used by the County to prepare construction plans and install local street traffic calming features to minimize the cut-through traffic identified by the analysis.

Status: The applicant's offer is appreciated. The \$200,000 should be subject to an escalator clause. The traffic analysis should identify specific traffic calming measures. To what extent has traffic calming been discussed with the local community?

Conclusion

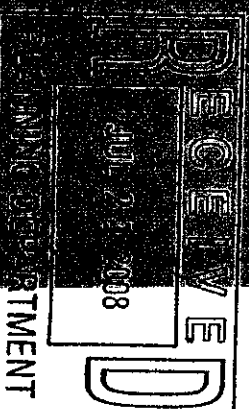
There are no major transportation issues which would preclude approval of this application. The Route 659 improvements are appreciated.

cc: Andy Beacher, Assistant Director

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County of Loudoun
Office of Transportation Services

MEMORANDUM



DATE: July 17, 2008

TO: Van Armstrong, Project Manager, Department of Planning

FROM: Art Smith, Senior Coordinator, Planning and Development

SUBJECT: ZCPA 2008-0001, ZCPA 2008-0002, SPEX 2002-0028
Broadlands Regional Medical Center
First Referral

The approval of the ZCPA's would allow all by-right uses and potentially special exception uses on the subject property including a hospital and associated uses. The Special Exception would allow the construction of a 164 bed, 475,000 sf hospital and outpatient medical services. The project site is located north of Broadlands Boulevard and bounded on the west by Route 659, Belmont Ridge Road. The Dulles Greenway is located north of the site. Please see Attachment 1, Project Vicinity Map. In its consideration of these applications, OTS reviewed a statement of justification dated April 2, 2008, project plats dated March 2008 and a traffic impact analysis (TIA) dated May 1, 2008, prepared by Gorove/Slade Associates. Draft proffers dated April 2, 2008 were also reviewed.

EXISTING, PLANNED AND PROGRAMMED TRANSPORTATION FACILITIES

ROADS

Route 659, Belmont Ridge Road, is currently a two-lane major collector in variable right-of-way. The road is planned to be expanded to a six-lane median divided minor arterial. This will occur in a number of phases, the first of which is construction of a four-lane median divided section between Broadlands Boulevard and the Greenway. This will be accomplished by the developers of Broadlands and completed prior to the opening of the hospital.

Broadland Boulevard is a four-lane median divided minor collector. Its eastern terminus is Shellhorn Road. The boulevard currently terminates a short distance east of Belmont Ridge Road. It is anticipated the remaining section to close this gap will be constructed by next year.

Truro Parish Drive/Maxpool Road Relocated (Route 625) is located approximately 0.6 miles south of the hospital site. The road is a four-lane median divided minor collector with a 35 mph posted speed limit. It has been constructed to its ultimate typical section.

Claiborne Parkway, Route 901, intersects with Broadlands Boulevard approximately 0.5 miles east of the hospital site. The Parkway is currently a four-lane median divided major collector road running between Route 7 and Croson Lane to the south. The CTP specifies the Parkway become a six-lane median divided road. There currently is no funding or time frame for this ultimate section.

The Dulles Greenway, Route 267, is located a short distance north of the hospital site. The Greenway is a limited access toll road running between Leesburg and the Dulles Toll Road. The Greenway has been completed to its currently planned six-lane typical section. However, the draft 2007 CTP proposes expansion to eight lanes.

TRANSIT, BICYCLE, PEDESTRIAN

There is currently no transit service to this hospital site. However, the Ashburn Farm Connector local transit route runs on Claiborne Parkway and serves the INOVA Loudoun Hospital and a similar route could be established to serve this hospital. Pedestrian and bicycle facilities are planned for Belmont Ridge Road and Broadlands Boulevard. There is also an extensive sidewalk network in the Broadlands community south of the hospital site, and an existing shared use trail on the north side of Broadlands Boulevard.

EXISTING (MARCH 2008) AND FORECASTED (2011 AND 2017) TRAFFIC VOLUMES AND LEVELS OF SERVICE (LOS)

The existing road network in the vicinity of the hospital site including lane configuration, traffic signals and stop signs is shown on Attachment 2. Existing daily and peak hour traffic volumes are shown on Attachment 3. Daily traffic volumes on Belmont Ridge Road and Claiborne Parkway are approaching 9,000 ADT. Existing peak hour LOS is shown in Attachment 4. All movements at all intersections studied are currently operating at acceptable service levels.

Completion of the 164 bed hospital is anticipated by 2011. The hospital would generate 2,951 daily vehicle trips (dvt) including 87 in the am peak hour and 179 in the pm peak hour. The TIA also assumes that 200k sf of medical-dental office space will develop proximate to the hospital. If so, 7,964 dvt would be generated. Hospital and medical office space would together generate 10,915 dvt. Please note the medical office trips were included in background traffic in the TIA since they are by-right and do not need legislative approval.

Total forecasted future traffic volumes for 2011 are shown on Attachment 5. The largest increases are on Belmont Ridge Road where daily volumes rise to 24,000 – 28,000 ADT on either side of the intersection with Broadlands Boulevard. Acceptable LOS requires expansion of Route 659 to four lanes along with traffic signals at the following Route 659 intersections: Dulles Greenway Eastbound Ramps, Dulles Greenway Westbound Ramps, Broadlands Boulevard, Truro Parish Road. If these improvements could be implemented, Attachment 6 shows resulting LOS, which would be adequate.

Please note that at the scoping meeting for the TIA, a comparison analysis for trip generation was requested by VDOT based on the square footage of the hospital as the independent variable in lieu of the number of beds. Using the hospital square footage

variable, the number of daily vehicle trips is 6,139 as compared to the 2,951 for the number of beds. The applicant's traffic engineer maintains: *"The number of beds is a more appropriate independent variable to use compared to the square footage of the hospital as it can more accurately reflect the number of employees, patients and visitors to the facility."*

Any additional information/documentation the consultant can provide in support of his view would be appreciated. Please note the number of beds has been used in the past for trip generation from hospitals. A review of the TIA analysis for the higher square footage-based trip generation indicated that while average delays did increase at intersections no intersection went from adequate to inadequate.

The final analysis in the TIA examined forecasted conditions in 2017. Six years of inherent regional growth was added to the 2011 volumes and the amount of medical office, again by-right, was increased to 400,000. Resulting levels-of-service are shown in Attachment 4. They remain adequate pending minor improvements. There is no need to widen Route 659 to six lanes by 2017.

TRANSPORTATION ISSUES

1. Please document the status of the construction of Broadlands Boulevard to its intersection with Belmont Ridge Road.
2. Please document the status of widening Belmont Ridge Road to four lanes between Broadlands Boulevard and the Greenway.
3. Improvements to Route 659 are important to adequate transportation access to the proposed medical campus. OTS's reading of Proffer V.D.49 of ZCPA 2008-0001 is that the applicant will provide a four-lane median divided expansion to Route 659 between Broadlands Boulevard and Northstar Boulevard in Brambleton. Further, these improvements will be constructed prior to the issuance of the first occupancy permit or its equivalent for the first building constructed on the property. Please confirm the accuracy of this proffer summary. This will be a substantial improvement over the current efforts of the "Route 659 Road Club" to widen the road, since that effort would only extend between Broadlands Boulevard and Truro Parish Drive.
4. The TIA for this application demonstrates that traffic signals will need to be installed at the Route 659/Broadlands Boulevard and Route 659/Truro Parish Drive intersections by 2011 to serve this proposed development at adequate service levels. There are no existing proffers specifically for these signals. The participation of the Medical Campus in the provision of these signals needs to be defined.
5. The transportation conditions of SPEX 2008-0028 include the following and all are appreciated:
 - A multi-purpose trail along Broadlands Boulevard

- A bus shelter
 - Applicant coordination with the County for transit marketing
 - An emergency entrance to the hospital
6. Please identify connections between the Broadlands Boulevard trail and the sidewalk/trail network in the Broadlands Community.
 7. Documentation on why the number of beds is a better variable for determining trip generation from a hospital, rather than square footage, would be appreciated.
 8. The applicant should work together with the Broadlands Community and the County to identify and implement traffic calming techniques which would discourage cut-thru traffic to the hospital using local streets.

CONCLUSION

OTS has a favorable view of the approval of these applications, subject to the applicant's responses to the issues noted above.

Attachments

cc: Charles Yudd, Assistant County Administrator
Terrie Laycock, Interim OTS Director
Andy Beacher, Assistant OTS Director/Highway Division Chief

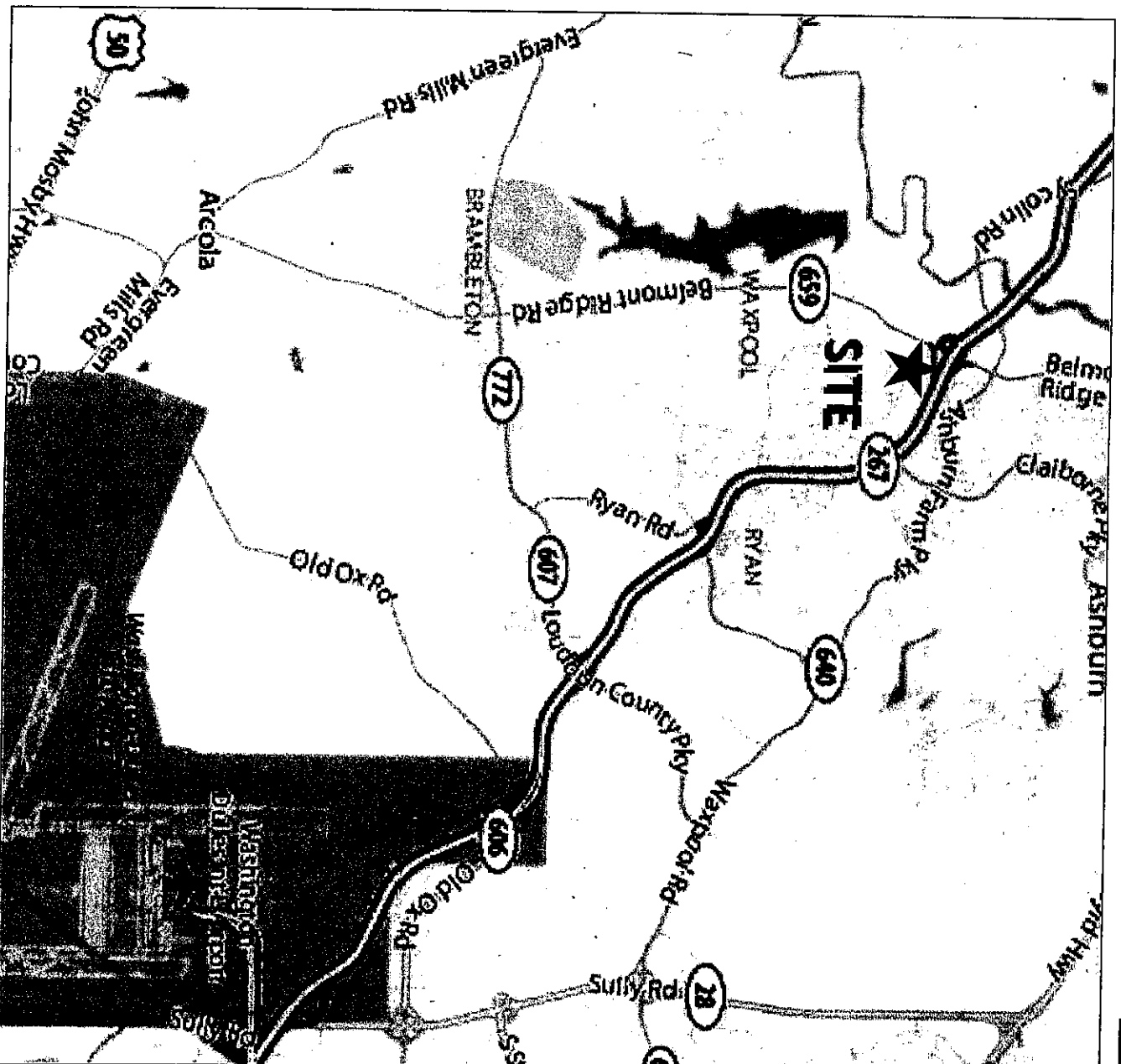


Figure 1: Site Location Map

ATTACHMENT 1

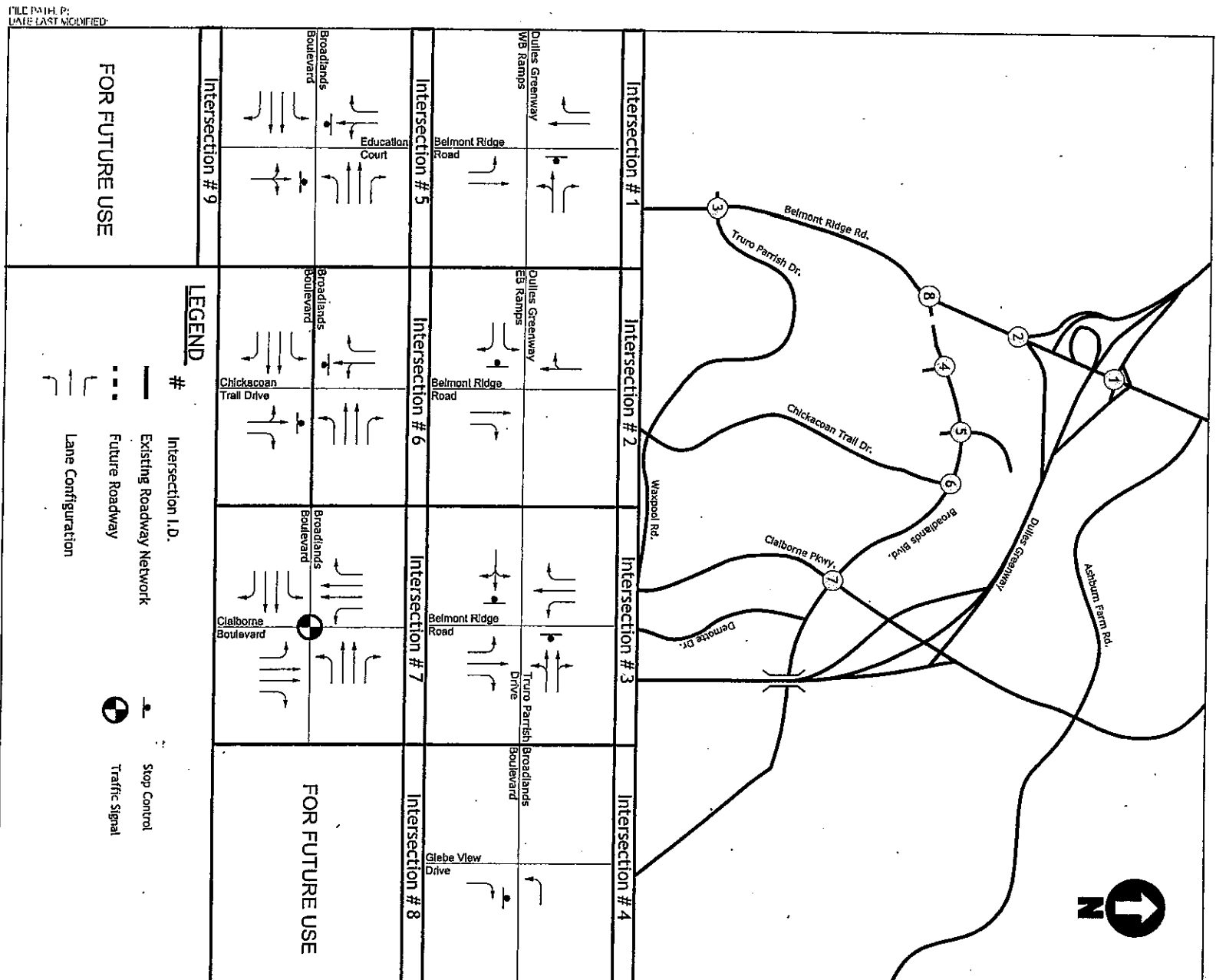


Figure 2
Existing (2008) Local Roadway Network

May 1, 2008

ATTACHMENT 2

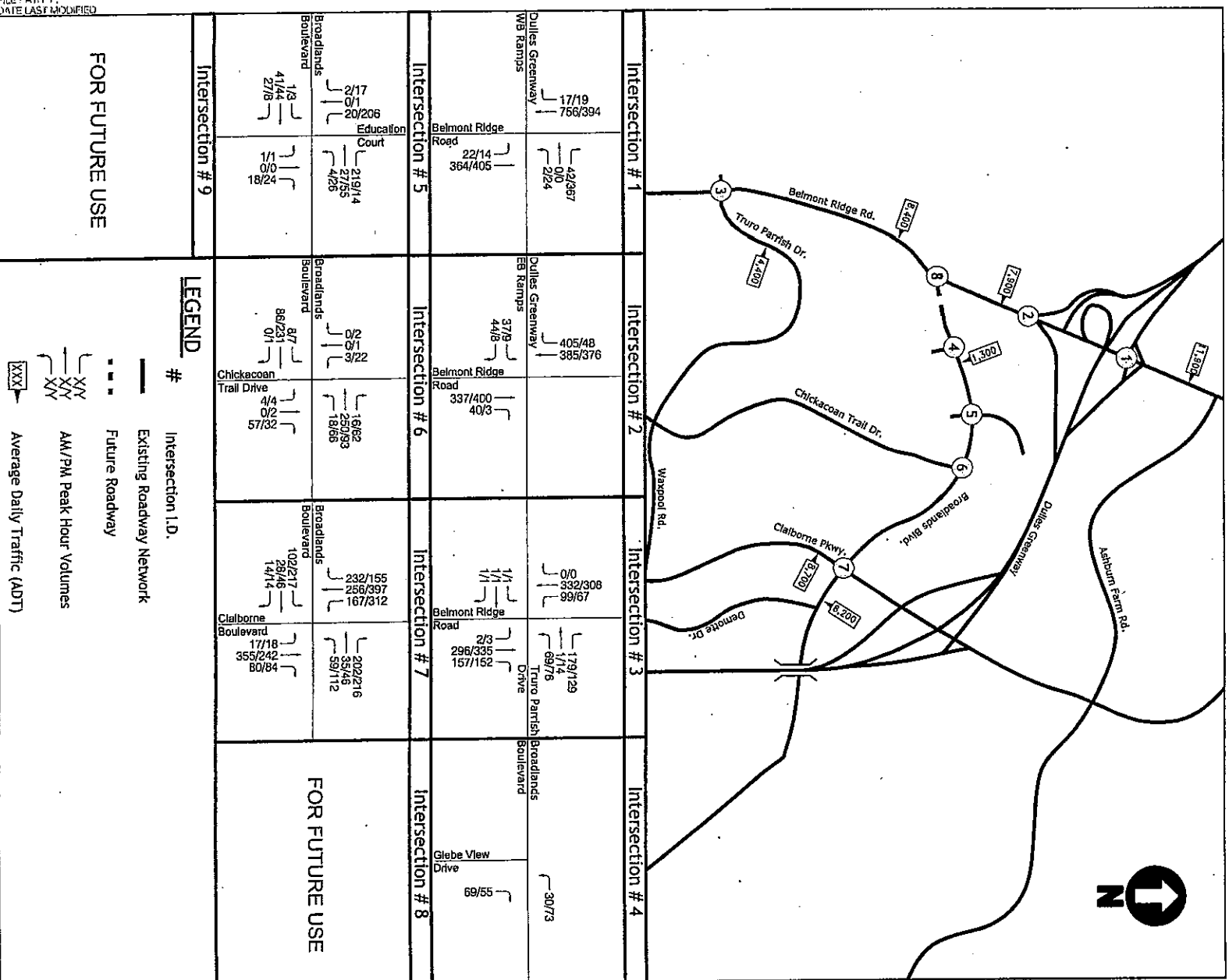


Figure 3
Existing (2008) Traffic Volumes

May 1, 2008

ATTACHMENT 3

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Existing Capacity Analysis

Intersection capacity analyses were performed for the existing conditions at the intersections contained within the study area during the morning and afternoon peak hours. *Synchro*, version 6.0 was used to analyze the study intersections based on the Highway Capacity Manual methodology.

The results of the intersection capacity analyses are presented in Table 2 and Figure 4, and are expressed in level of service (LOS) and delay (seconds per vehicle) per approach.

Table 2: Existing (2008) Capacity Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s/Veh)	LOS	Delay (s/Veh)
Belmont Ridge Road and Dulles Greenway Westbound Ramps (Unsignalized)				
Westbound Approach	B	11.4	C	17.7
Northbound Left Turn	A	9.4	A	8.2
Belmont Ridge Rd and Dulles Greenway Eastbound Ramps (Unsignalized)				
Eastbound Left Turn	C	16.9	B	12.1
Belmont Ridge Road and Truro Parish Drive (Unsignalized)				
Eastbound Approach	C	17.6	C	16.9
Westbound Approach	D	33.3	C	21.3
Northbound Left Turn	A	7.9	A	7.9
Southbound Left Turn	A	8.6	A	8.6
Broadlands Boulevard and Glebe View Drive (Unsignalized)				
Westbound Left Turn	A	7.3	A	7.3
Northbound Approach	A	8.5	A	8.5
Broadlands Boulevard and Stonewheel Way/Education Court (Unsignalized)				
Eastbound Left Turn	A	7.8	A	7.4
Westbound Left Turn	A	7.3	A	7.3
Northbound Approach	A	8.5	A	8.6
Southbound Approach	A	9.5	B	11.0
Broadlands Boulevard and Chickacoan Trail Drive (Unsignalized)				
Eastbound Left Turn	A	0.0	A	7.5
Westbound Left Turn	A	7.4	A	7.9
Northbound Approach	A	8.9	A	9.7
Southbound Approach	A	9.0	A	9.1
Broadlands Boulevard and Claiborne Parkway (Signalized)				
Overall	B	15.9	B	18.5
Eastbound Approach	B	14.7	C	21.2
Westbound Approach	A	9.4	B	12.7
Northbound Approach	C	22.7	C	21.7
Southbound Approach	C	28.6	C	27.1

According to the Loudoun County Facility Standards Manual, it is desirable to achieve a level of service “D” or better by approach. Table 2 shows that all study intersections operate at acceptable levels in the existing conditions.

Broadlands Regional Medical Center Traffic Impact Analysis

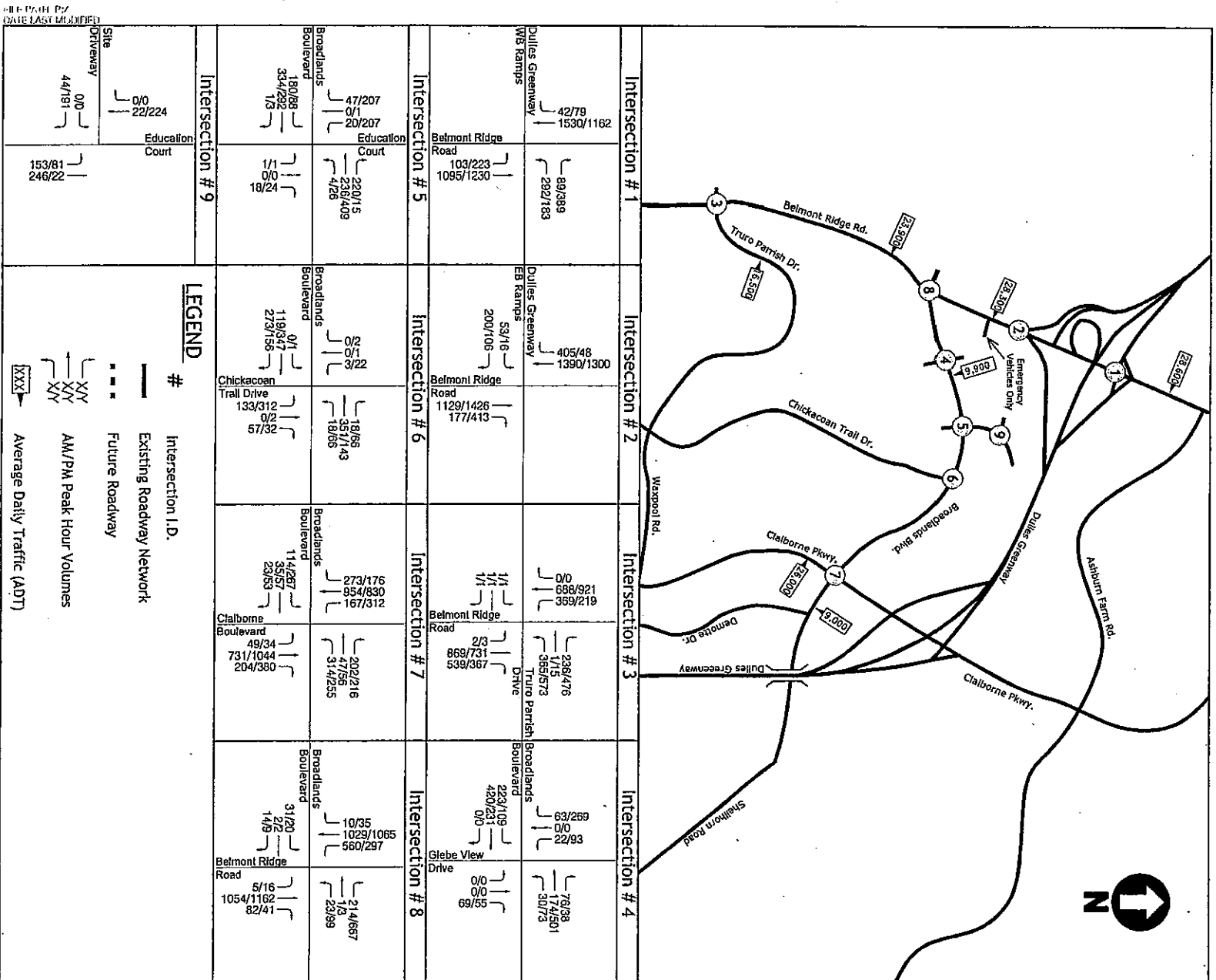


Figure 9
Future with Development (2017)

May 1, 2008

ATTACHMENT 5

Future with Development Capacity Analysis

Capacity analyses were performed for the future with development 2011 conditions. The results summarized in Table 7 displays the levels of service by approach, where applicable, and Figure 11 illustrates the capacity analysis results graphically. A detailed review of the analysis is provided in the Technical Appendix.

Table 7: Future with Development (2011) Capacity Analysis

Intersection	Future with Development			
	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s/Veh)	LOS	Delay (s/Veh)
Belmont Ridge Road and Dulles Greenway Westbound Ramps (Signalized)				
Overall Intersection	C	20.5	B	15.4
Westbound Approach	D	36.7	B	17.2
Northbound Approach	B	15.0	B	16.8
Southbound Approach	C	20.9	B	12.9
Belmont Ridge Rd and Dulles Greenway Eastbound Ramps (Signalized)				
Overall Intersection	B	10.3	B	11.2
Eastbound Approach	B	10.9	D	49.8
Northbound Approach	B	19.5	B	15.4
Southbound Approach	A	3.5	A	1.9
Belmont Ridge Road and Truro Parish Drive (Signalized)				
Overall Intersection	C	30.6	C	30.7
Eastbound Approach	D	46.5	D	45.7
Westbound Approach	D	41.2	C	31.5
Northbound Approach	C	29.2	C	31.5
Southbound Approach	C	26.5	C	29.0
Broadlands Boulevard and Glebe View Dr/Site Driveway (Unsignalized)				
Eastbound Left Turn	A	8.3	A	8.9
Westbound Left Turn	B	8.3	A	7.9
Northbound Approach	A	10.0	A	9.2
Southbound Approach	B	14.5	C	24.4
Broadlands Boulevard and Stonewheel Way/Education Court (Unsignalized)				
Eastbound Left Turn	A	8.9	A	8.4
Westbound Left Turn	A	8.0	A	7.9
Northbound Approach	A	9.8	A	9.7
Southbound Approach	B	10.3	B	14.1
Broadlands Boulevard and Chickacoan Trail Drive (Unsignalized)				
Eastbound Left Turn	A	0.0	A	7.6
Westbound Left Turn	A	0.9	A	8.6
Northbound Approach	B	11.6	C	23.4
Southbound Approach	B	13.7	B	12.3

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Broadlands Regional Medical Center – Traffic Impact Analysis



Intersection	Future with Development			
	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s/Veh)	LOS	Delay (s/Veh)
Broadlands Boulevard and Claiborne Parkway (Signalized)				
Overall Intersection	C	20.2	C	27.2
Eastbound Approach	C	29.0	D	36.5
Westbound Approach	B	21.8	D	34.8
Northbound Approach	C	20.2	C	27.2
Southbound Approach	C	18.5	C	21.5
Education Court and Site Drive				
Eastbound Approach	A	8.6	A	9.8
Northbound Left Turn	A	3.4	A	6.3
Broadlands Boulevard and Belmont Ridge Road				
Overall Intersection	D	47.0	C	20.6
Eastbound Approach	D	37.3	D	36.7
Westbound Approach	A	5.4	A	7.2
Northbound Approach	F	107.1	C	33.1
Southbound Approach	B	10.6	B	16.8
Broadlands Boulevard and Belmont Ridge Road - Adjusted AM Signal Timing				
Overall Intersection	C	27.4	C	20.6
Eastbound Approach	D	37.3	D	36.7
Westbound Approach	A	5.4	A	7.2
Northbound Approach	D	53.4	C	33.1
Southbound Approach	B	10.8	B	16.8

As mentioned previously, it is desirable to achieve a LOS D or better per approach. The following recommendations are required to attain the criteria set forth by the County:

- *Intersection of Broadlands Boulevard and Belmont Ridge Road:*
 - Minor signal timing adjustments during weekday morning peak hour

As mentioned previously, it is desirable to achieve a LOS D or better per approach. With the implementation of the improvements in the future without development scenario, all study intersections will operate at acceptable levels in the future with development condition. The results of the intersection capacity analyses are shown in Figure 10 and recommended improvements are shown graphically in Figure 11.

ATTACHMENT 6



FUTURE CONDITIONS WITH DEVELOPMENT PLUS SIX YEARS (2017)

Future with Development plus Six Years (2017) Traffic Volumes

The volumes used in this scenario were obtained by adding an additional six years of inherent regional growth to the 2011 volumes, using the growth rates described in the prior scenarios for each roadway. In addition, the trips generated by the remaining 200,000 square feet of by-right medical office use was added to the traffic volumes, for a total of 400,000 square feet of medical office considered in the analysis. The additional trip generation for the 200,000 square feet of medical office is the same as that previously shown for the by-right medical office in Table 3. The resulting peak hour volumes analyzed for this condition are contained in Figure 16.

Future with Development plus Six Years (2017) Capacity Analysis

Capacity analysis was performed for the future with development plus six years condition with the results of the analysis summarized in Table 10 and is illustrated in Figure 17.

Table 10: Future with Development plus Six Years (2017) Capacity Analysis

Intersection	Future with Development Plus Six Years			
	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s/veh)	LOS	Delay (s/veh)
Belmont Ridge Road and Dulles Greenway Westbound Ramps (Signalized)				
Overall Intersection	C	32.3	C	22.4
Westbound Approach	D	49.1	C	26.5
Northbound Approach – add 2 nd through lane as planned	B	18.3	C	25.9
Southbound Approach	D	37.7	B	16.2
Belmont Ridge Rd and Dulles Greenway Eastbound Ramps (Signalized)				
Overall Intersection	A	32.7	A	4.4
Eastbound Approach	A	8.5	D	49.6
Northbound Approach – add 2 nd through lane as planned	A	9.1	A	1.6
Southbound Approach	A	6.7	A	3.5
Belmont Ridge Road and Truro Parish Drive (Signalized)				
Overall Intersection	C	32.6	C	33.0
Eastbound Approach	D	48.2	D	47.1
Westbound Approach	D	43.8	C	32.9
Northbound Approach	C	33.4	C	35.5
Southbound Approach	C	26.0	C	30.8
Broadlands Boulevard and Stonewheel Way/Education Court (Unsignalized)				
Eastbound Left Turn	B	10.2	A	8.8
Westbound Left Turn	A	8.0	A	8.0
Northbound Approach	B	10.7	B	11.6
Southbound Approach	B	11.7	C	17.9

Broadlands Regional Medical Center - Traffic Impact Analysis



Intersection	Future with Development Plus Six Years			
	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s/Veh)	LOS	Delay (s/Veh)
Broadlands Boulevard and Site Driveway				
Eastbound Approach	A	9.3	B	10.2
Westbound Approach	A	8.8	A	8.0
Northbound Approach	B	10.7	A	9.4
Southbound Approach	D	30.3	F	116.7
Overall Intersection - add traffic signal				
Eastbound Approach	C	24.8	C	23.1
Westbound Approach	C	22.4	C	21.3
Northbound Approach	B	17.3	B	13.0
Southbound Approach	D	48.7	D	41.6
	D	49.4	D	46.6
Broadlands Boulevard and Chickacoan Trail Drive (Unsignalized)				
Eastbound Left Turn	A	0.0	A	7.7
Westbound Left Turn	A	0.7	A	9.1
Northbound Approach	B	12.9	D	34.0
Southbound Approach	C	16.0	B	13.3
Broadlands Boulevard and Claiborne Parkway (Signalized)				
Overall Intersection	C	21.1	C	29.4
Eastbound Approach	B	19.8	D	37.9
Westbound Approach	B	18.9	D	35.7
Northbound Approach	C	31.4	C	29.7
Southbound Approach	C	26.2	C	24.1
Education Court and Site Drive (Unsignalized)				
Eastbound Approach	A	8.8	B	13.8
Northbound Left Turn	A	5.5	A	7.2
Broadlands Boulevard and Belmont Ridge Road (Signalized)				
Overall Intersection	E	56.9	D	40.3
Eastbound Approach	D	37.3	D	37.6
Westbound Approach	A	6.9	A	9.3
Northbound Approach	E	56.8	F	85.6
Southbound Approach	E	65.3	C	22.8
Overall Mitigation				
Eastbound Approach	D	37.3	D	37.6
Westbound Approach	A	9.6	A	7.8
Northbound Approach	D	52.2	C	31.8
Southbound Approach - add 2nd left turn bay	B	119.0	C	22.0

As mentioned previously, it is desirable to achieve a LOS D or better per approach. The following recommendations are required to attain the criteria set forth by the County. The following

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improvements are assumed as planned development in the capacity analysis.

- *Intersection of Belmont Ridge Road and Dulles Greenway Westbound Ramps:*
 - Add second northbound through lane as planned;
- *Intersection of Belmont Ridge Road and Dulles Greenway Westbound Ramps:*
 - Add second northbound through lane as planned;
- *Intersection of Belmont Ridge Road and Broadlands Boulevard:*
 - Add second southbound left turn bay;
- *Intersection of Broadlands Boulevard and Site Driveway/Glebe View Drive:*
 - Install a traffic signal.

Several of these improvements have been previously proffered by other developments in the area. The results of the intersection capacity analyses are shown in Figure 17 and recommended improvements are shown graphically in Figure 18.

ATTACHMENT 7

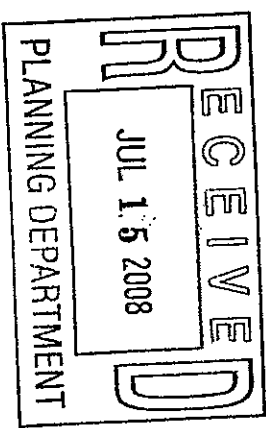


COMMONWEALTH of VIRGINIA

DAVID S. EKERN, P.E.
COMMISSIONER

DEPARTMENT OF TRANSPORTATION
14685 Avlon Parkway
Charlottesville, VA 20151
(703) 383-VDOT (8368)

July 11, 2008



Van Armstrong, A.I.C.P.
County of Loudoun
Department of Planning MSC#62
1 Harrison Street, S.E.
P.O. Box 7000
Leesburg, Virginia 20177-7000

Re: Broadlands Regional Medical Center
Loudoun County Application Numbers SPEX 2008-0028, ZCPA 2008-0001, and ZCPA
2008-0002

Dear Mr. Armstrong:

In accordance with the Virginia Traffic Impact Analysis Regulations, 24 VAC 30-155, the above application and traffic impact analysis were received by the Virginia Department of Transportation (VDOT) for review on May 20, 2008 and May 27, 2008.

We have evaluated the application and related traffic impact analysis and prepared final comments on the results of our evaluation. The comments present our key findings as well as detailed comments on the future transportation improvements which will be needed to support the current and planned development in the study area.

Our comments are attached to assist the Loudoun County Planning Commission and Board of Supervisors in their decision making process regarding the application.

Please arrange to have these final comments included in the official public records, and to have both this letter and the VDOT comments placed in the official file for this application. VDOT will make these documents available to the public through various means, and may post them to the VDOT website.

ATTACHMENT 1 *e*

Broadlands Regional Medical Center

July 11, 2008

Page 2

If you have any questions, please call me at (703) 383-2424.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. B. VanPoole', written in a cursive style.

Thomas B. VanPoole, P.E.
Senior Transportation Engineer



COMMONWEALTH of VIRGINIA

DAVID S. EKERN, P.E.
COMMISSIONER

DEPARTMENT OF TRANSPORTATION

14685 Avlon Parkway
Chantilly, VA 20151
(703) 383-VDOT (8368)

July 11, 2008

Van Armstrong, A.I.C.P.
County of Loudoun
Department of Planning MSC#62
1 Harrison Street, S.E.
P.O. Box 7000
Leesburg, Virginia 20177-7000

Re: Broadlands Regional Medical Center
Loudoun County Application Numbers SPEX 2008-0028, ZCPA 2008-0001, and ZCPA
2008-0002

Dear Mr. Armstrong:

We have reviewed the above application and traffic impact analysis as requested in your May 20, 2008 transmittal and the May 27, 2008 Chapter 527 transmittal. We offer the following comments:

Traffic Impact Analysis:

1. It takes an unreasonably long time to navigate through Synchro files because of the time the model takes to redraw and load the file. I believe the problem is inclusion of several un-connected links to the main network, for the purpose of showing future connections. Since these links serve for presentation only and do not play a role in the analysis I would recommend taking the un-connected links out of the model and resubmit. I would agree that the results would not change, however it is important that Synchro files are easy to navigate for review purposes.
2. Figure 3 Existing Traffic Volumes – The left and right turn volumes on WB Intersection 3 and EB Intersection 5 and 6 are switched. Synchro files however show the correct volumes. It suffices to only correct volumes shown on the figure.

3. Input the correct turn bay lengths onto the Synchro model. The model currently shows turn lanes extending all the way back to the upstream intersection, adding incorrect number of thru lanes to the main artery (e.g., Broadlands is shown as four thru lanes in one direction.) This would effectively show the network operating better than actual and may produce erroneous results.
4. Is it possible to include a table showing "other developments" that are preferred for the improvements mentioned on Page 14 and in the conclusion?
5. In the analysis of "Future With Development" on page 22, the study claims that the failing northbound approach at the intersection of Broadlands Blvd and Belmont Ridge Road can be fixed with minor signal timing adjustments. However this intersection does not currently exist and the signal timing data couldn't have come from VDOT. One would assume that the engineer used optimized signal timings during the analysis of "Future Without Development" which yielded a LOS D/52.8 for the northbound approach (see page 14.)
6. So, if signal timings are the same (and should be the same) in both scenarios (Future With Development and Future Without Development) then why the deterioration in the LOS?
7. The "square footage" vs. "number of beds" as the independent variable to be used for the trip generation numbers should have been finalized at the scoping meeting prior to the initiation of the study. Nonetheless, there is a significant difference between the trip generation numbers depending on which variable is used (see table below)

Variable	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	Total	Total	Total
# of Beds	61	26	87	65	114	179	2951		
Square Footage	338	165	503	170	343	513	6139		
% Increase	454%	535%	478%	162%	201%	187%	108%		

Table 1 – Variable Comparison for Hospital ITE Land Use Code 610

Additionally, the sample size used in the ITE Trip Generation, 7th Edition for each variable is comparable, thus making both variables statistically reliable (7, and 14 studies for AM and PM peak hour for # of Beds vs. 5 and 9 studies for Square Footage.)

Pending Loudoun County's agreement, VDOT recommends using "square footage" as the independent variable to determine trips generated by the facility.

Broadlands Regional Medical Center

July 11, 2008

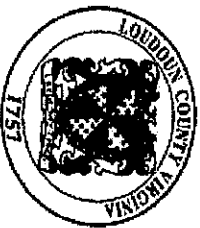
Page 3

8. A quick look at the volumes shown on Figure 13 "Future with Development Based on Square Footage" indicates that some left turn lanes warrant an additional lane (intersections 3, 6, 7, and 8). Please perform a left turn lane warrant analysis based on VDOT standards and guidelines.
 9. Table 9 shows the LOS for "Future with Development Based on Square Footage" which is not much different than the "Future with Development Based on # of Beds" although the volumes have been significantly increased (see table 1 above). **In certain cases the LOS has improved although volumes are quadrupled.** Please verify the analysis is accurate and all input parameters are inputted correctly.
 10. Failing intersection LOS is not justification for a traffic signal. Other remedial measures should be considered prior to signalization. In the case of the intersection of Broadlands Blvd. and Site Driveway Intersection 4 under the Future Plus Six Years scenario, the failing approach is the southbound (exiting the site). Please consider additional travel lanes or separate turn lanes as the mitigation measure.
 11. The emergency access point from Belmont Ridge Road (Intersection 2) should be limited to ingress to the site only. Egress can be done via other access points along Broadlands Blvd.
 12. Under Executive Summary, Page VI, Section, "Future Conditions With Development (2011), 5th paragraph states that, "At the scoping meeting VDOT requested a comparison analysis for the traffic impact based on the traffic generation forecast for hospital based on the square foot of the hospital as the independent variable." This is incorrect. It was not a request but suggested to look in to trips generated by SIMILAR hospital in the region. There was no request for an analysis based on square footage! Please correct the statement.
 13. Provide a map showing the location of the background developments considered for this study.
 14. Provide site's trip distributions by % in addition to turning movements shown in figure 8.
- Please revise the traffic impact analysis and resubmit. If you have any questions, please call me at (703) 383-2424.

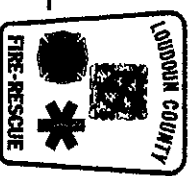
Sincerely,



Thomas B. VanPoole, P.E.
Senior Transportation Engineer

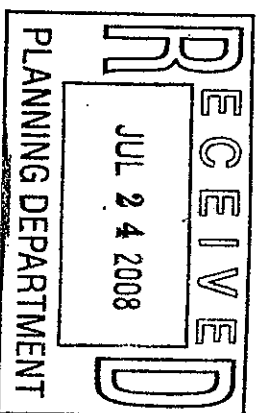


LOUDOUN COUNTY, VIRGINIA
Department of Fire, Rescue and Emergency Management
803 Sycolin Road, Suite 104 Leesburg, VA 20175
Phone 703-777-0333 Fax 703-771-5359



Memorandum

To: Van Armstrong, Project Manager
From: Maria Figueroa Taylor, Fire-Rescue Planner
Date: July 23, 2008
Subject: Broadlands Regional Medical Center / HCA
ZCPA 2008-0001, ZCPA-0002 & SPEX 2008-0028



Thank you for the opportunity to review the above-captioned application. The Fire and Rescue Planning Staff, in agreement with the Fire Marshal's Office, has no objection to the application as presented. The Ashburn Volunteer Fire and Rescue Company, first due fire and rescue company to the proposed hospital also reviewed the application and had questions for the Fire-Rescue Staff but offered no comments.

The Fire-Rescue GIS and Mapping coordinator offered the following information regarding estimated response times:

PIN	Project name	Ashburn VFRC Station 6 Travel Time
154-19-9491	Broadlands Regional Medical Center	4.6 minutes

The Travel Times for each project were calculated using ArcGIS and Network Analyst extension to calculate the travel time in minutes. To get the total response time another two minutes were added to account for dispatching and turnout. This assumes that the station is staffed at the time of the call. If the station is unoccupied another one to three minutes should be added.

Project name	Approximate Response Time for Ashburn VFRC Station 6
Broadlands Regional Medical Center	6 minutes, 36 seconds

If you have any questions or need additional information, please contact me at 703-777-0333.

C: Project file

*Teamwork * Integrity * Professionalism * Service*

ATTACHMENT 1 *e*

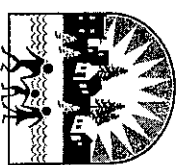
463



Loudoun County Health Department

P.O. Box 7000
Leesburg VA 20177-7000

Environmental Health
Phone: 703 / 777-0234
Fax: 703 / 771-5023



Community Health
Phone: 703 / 777-0236
Fax: 703 / 771-5393

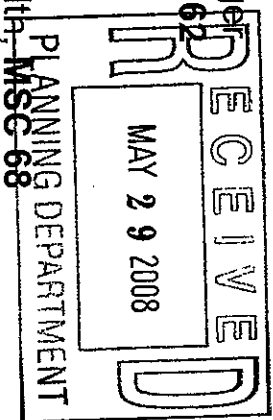
27 May 2008

MEMORANDUM TO: Van Armstrong, Project Manager

Department of Planning, **MSC 62**

FROM:

Matthew D. Tolley
Sr. Env. Health Specialist
Division of Environmental Health, **MSC 68**



SUBJECT:

ZCPA 2008-0001 & 02 & SPEX 2002-0028;
Broadlands Regional Medical Center
LCTM: 78/49 (PIN 154-19-9491)

The Health Department recommends approval of this application. However, no further approvals will be forthcoming until the existing sanitary facilities are abandoned as was noted in an earlier referral (7 July 2005) for road easements. The abandonment of the sanitary facilities must be preceded by an application for and issuance of permits. The plat reviewed was prepared by Urban, Ltd. was revised 1 May 2008.

Attachments Yes ___ No X

If further information or clarification on the above project is required, please contact Matt Tolley at 771-5248.

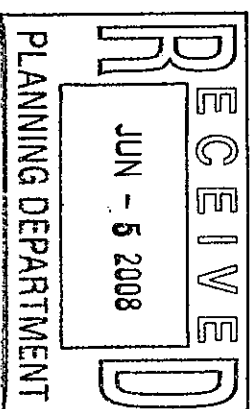
MDT/JEL/mt
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ATTACHMENT 13

VDH VIRGINIA
DEPARTMENT
OF HEALTH
Protecting You and Your Environment

464

June 5, 2008



Mr. Van Armstrong
Department of Planning
1 Harrison Street, S.E.
P. O. Box 7000
Leesburg, Virginia 20177-7000

Re: ZCPA-2008-0001, ZCPA-2008-0002, SPEX-2002-0028, Broadlands Regional
Medical Center/HCA

Dear Mr. Armstrong:

Loudoun Water has reviewed the referenced application and offers no objection to its approval. Public water and sanitary sewer service would be contingent upon the developer's compliance with the Authority's Statement of Policy; Rates, Rules and Regulations; and Design Standards.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Julie Atwell".

Julie Atwell
Engineering Administrative Specialist

ATTACHMENT 1h

A65



Loudoun County General Plan

Chapter 2

Planning Approach

Countywide Health Care Facilities Policies

1. The County's Countywide Health Care Facilities policies are intended to provide a general set of policies that guide the location and type of health care facilities and healthcare-related businesses throughout the County and that provide flexibility to adapt the rapid advances in medical technologies and medical care facilities.
2. The goals of the Countywide Health Care Facilities policies are to promote:
 - Development and provision of high quality health care services within Loudoun County;
 - Appropriate access to health care services for residents of all parts of Loudoun County;
 - Development of a broad range and improved distribution of services in Loudoun County;
 - Efficiency and cost containment for services provided in Loudoun County;
 - Development of sophisticated, high level health care services for health care consumers (including a Tertiary Medical Center within Loudoun County that will permit residents to choose to stay in the County for care);
 - Choice for health care consumers;
 - Development of systems to provide care to all persons, including the uninsured, and to support community health programs;
 - Enhancement of the Loudoun County tax base, employment, growth, and economic development;
 - Availability in the present and foreseeable future of sufficient land in appropriate locations for health care facilities and services; and,
 - Development of a new hospital in the Dulles South area of the County which is experiencing rapid population growth and which presently has poor access to any hospital.
3. Health care facilities to be developed within the County shall take into consideration State regulations concerning the location of health care facilities and the following criteria:
 - The area, population, topography, highway facilities and availability of the services to be provided by the project in the particular part of the health service area in which the project is proposed, the distinct and unique geographic, socioeconomic, cultural, and transportation characteristics of the area to be served, and barriers to access to care;
 - Compatibility of any proposed large-scale hospital facility with other uses in the vicinity, particularly the impact on existing, stable residential neighborhoods; and,
 - Availability of sufficient acreage to permit the development and future expansion of the proposed health care facility and healthcare-related businesses on the site as well as the potential adverse impact such expansion would have upon existing or planned neighborhoods adjacent to the areas of potential expansion.
4. The County will encourage the location of a variety of health care facilities in those areas where needs have been identified that may be underserved, for example in the northwest and southern

parts of the County and in the Joint Land Management Areas surrounding the Towns. Applications for the location of health care facilities should substantially meet State requirements for approval of the proposed facilities and/or services. The County will establish incentives to facilitate the private development of primary medical care services in locations across the County, with a goal of having such services be available to all County residents within 20 minutes driving time during periods of peak travel demand. In addition, the County will take into consideration the availability of related and/or support services and compatibility of the proposed use with surrounding development patterns.

5. The County will encourage the co-location of health care facilities and healthcare-related businesses that provide a synergistic environment, improve access and choice of services for County residents, and promote the development of various types of health care facilities.
6. The County will support a variety of programs and incentives that help create the attributes necessary to support tertiary medical services (See Health Care Facilities Incentive Policies below.). The Tertiary hospital to serve the County should be located where the infrastructure is already in place and surrounding uses are not only compatible but also complementary.
7. The County may recognize areas around medical centers – present and future – which are appropriate for zoning districts that would allow healthcare-related businesses in those areas and create such zoning districts. The County recognizes that the residents of the Route 50 corridor do not have adequate access to emergency care or hospital related services. The Route 50 corridor should be given special consideration for the next full-service hospital and EMS ambulance receiving facility to be built in the County. The Cornwall Emergency facility, located in Leesburg presently serves as a much-needed receiving facility for EMS ambulances and residents in Western Loudoun. The County encourages the reestablishment of a full service facility at the Cornwall Campus. The County will encourage continued use and development of the Cornwall campus.
8. The County encourages the location of healthcare-related businesses in proximity to established and proposed medical centers. The County will encourage locations of health care services adjacent to the Towns in groupings or clusters that are compatible in scale with the surrounding land uses and that serve the needs of nearby residents.
9. The County encourages the development of primary care services and, where appropriate, freestanding emergency care centers, in County areas where population densities are inadequate to support development of medical centers.
10. The County will support incentives to encourage the private sector to provide services including but not limited to, psychiatric medical care, geriatric medical care and indigent medical care to satisfy the unmet health care needs of these populations. (See Health Care Facilities Incentive Policies below.).
11. The County will continue to provide appropriate medical services and health-related community-based services through the appropriate County Departments.
12. The County recognizes the changing needs of the aging population and supports additional policies that address the development of various types of retirement housing, including but not limited to: independent living, assisted living, skilled nursing facilities and continuing care retirement communities.
13. The existing system by which the Loudoun County Department of Fire and Rescue Services develops its service plan provides efficient and comprehensive planning for the future emergency services needs of the County. The County will continue to rely on this system for determining

need and location of future Fire and Rescue Service facilities.

14. The County will encourage development of multiple health care facilities and sites that support regional disaster planning efforts and that can provide medical support in the event of an epidemic or catastrophe. The County will encourage wide dispersal of facilities and avoid concentration of disaster support facilities in proximity to one another.

15. Health care facilities planning should be considered in the County's transportation and land use planning. The Health Care Facilities policies will apply during the time horizon of twenty years as provided in the Revised General Plan.

16. As part of the periodic review of the Comprehensive Plan, the County will review the Countywide Health Care Facilities policies to ensure health care facilities needs are being met.

Countywide Health Care Facilities Incentive Policies

1. In addition to the incentives provided in Chapter 4, Economic Development policies, the County will consider the following to encourage the location of health care facilities in areas that have been identified as underserved such as, but not limited to, health care zones:
 - FAR density bonuses;
 - Creation of special zoning districts that encourage health care zones; and,
 - Expedited review processes.
2. The County encourages development of quality health care facilities, including the provision of tertiary medical services and will:
 - Promote partnerships with institutions of higher learning that support higher level health care;
 - Encourage the growth and expansion of specialty care services;
 - Encourage the development of tertiary level services in those areas where population, densities and characteristics make the availability of such services viable;
 - Work with the health care industry to ensure workforce issues are being addressed; and,
 - Actively market to health care providers and related businesses those areas that have been identified as underserved or in areas that have been identified as health care zones.

Board of Supervisor's Findings for Denial

1. The uses allowed under the current zoning are reasonable and consistent with the land use policies of the Revised General Plan.
2. The current Concept Development Plans for Fallen Willow Farm and Broadlands Office Park are consistent with the land use policies of the Revised General Plan.
3. The current Concept Development Plans are consistent with policies of the Revised Countywide Transportation Plan supporting the planned transportation network in the vicinity.
4. The currently-allowed development conforms to the requirements of the 1972 Zoning Ordinance and 1993 Zoning Ordinance which were in effect at the time of the prior rezonings, subject to any then-requested modifications.
5. The development proposal and range of uses proposed are less compatible with the adjacent residential neighborhood than the currently-allowed office development and range of uses.
6. The currently-approved development for a unified office park will result in a more harmonious community in the Broadlands planned unit development than the proposed development.
7. The development proposal produces vehicle trips on the existing and planned road network above or beyond the vehicle trips that would likely be produced by the currently-approved office developments.
8. The development proposal will create more traffic on Broadlands Boulevard and Route 659 than the currently-approved office developments and impair the safety of pedestrian connections, especially in the residential area adjoining the site.
9. The proposed development will generate more noise from sirens, helicopters and trucks on weekends, which the applicant has failed to adequately mitigate and which would negatively impact surrounding uses, including the residential area in the neighborhood, than the unified office park that is currently allowed.
10. The proposed development will generate more light and glare from the building and parking lots at night than the currently-permitted unified office park, which would negatively impact surrounding uses, including the residential area in the neighborhood.
11. The height and bulk of the proposed development, including a density of .93 FAR on the Fallen Willow Farm parcel with no FAR averaging plan, will not create as harmonious a community in the Broadlands planned unit development as the unified office park will.
12. The proposed development would change the character of the neighborhood and be inconsistent with the legitimate expectations of the residents who live in Broadlands and who bought their homes in reliance on the currently-approved concept development plans.
13. No changes affecting the neighborhood have occurred since the currently-approved concept development plans were approved that justify a change in the allowed uses and concept development plans.
14. Transportation access is inadequate from the south area of the County.